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# ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

THE ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXXI. MARCH, 1920. NO. 3.


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## Specific, Subspecific and Varietal Categories of Insects and the Naming of them.


By W. L. McATEE, U. S. Biological Survey, Washington, D. C.



(Continued from page 55).


In naming taxonomic conceptions subordinate to the species it is important to bear in mind that they may not permanently be regarded of the same rank as that in which originally described. Thus a form first designated as a species may later be shown to be a subspecies; a variety may be found to be a subspecies, or a form assigned to either of these categories may later be given specific rank*. Precautions should

*The frequency of this occurrence should help students to realize to what an extent taxonomy deals with concepts rather than entities, that while the things may not change in measurable time, concepts of them certainly do, and that the present phase of the concepts is no more to be seriously accepted as fixed than were the half-century or century old views now discarded. Certainly a present change in an admittedly ever-changing concept should not inspire deep umbrage, especially as in the last

be taken, therefore, to avoid the use. of preoccupied names. Every name used for any form, variety, subspecies or species of the same genus in any part of the world, should be taken into consideration, and a safer rule is to avoid using a name that has ever been used in the same family.

This requires many names, and the problem of finding them apparently has appalled various workers, as they have taken "the easiest way" and resorted to inordinate use* of names derived from those of the collector and place of collection. The idea of dedicating a species to another person as a mark of affection or esteem is commendable, but overdone it ceases to be a distinction. If you have named a form for some one as an expression of genuine respect or other form of real appreciation, do not cheapen your homage by subsequently naming numerous forms for mere collectors of material you chance to have in hand; it is entirely possible that the form may have been collected a century before by someone else. Another type of scientific name derived from personal names is that immortalizing an error or oversight on the part of the original author, resulting in use of a preoccupied name. This form of personal name is a doubtful encomium and perhaps in many cases is not intended as a com-

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analysis, it represents the views of another individual, between which and your views, posterity will be the final and no doubt just judge. In mathematics, the most exact of the so-called exact sciences, approximations are freely used, and some of them are among the most valuable possessions of the science. Surely taxonomists working in one of the most inexact of all fields of science should be satisfied with approximations, and what is more to the point, recognize that they are only approximations, and not to be taken as immutable entities, nor fit subjects for pedantic positiveness, when in both respects, they are the opposite.

*To cite, but not to identify, an instance of such overuse of geographic and personal names, reference may be made to a series of papers on exotic plants, in which 350 new species are named. Seventy-one of these specific names are of geographical derivation and 59 of them are based on the name of the single collector. Unfortunately there is no canon of nomenclature designed to curb such work, but *a priori*, one would expect that the naming by one author of 59 new species for a single individual collector in a single series of papers on organisms of a restricted locality would be prevented by the dictates of reason and good taste.

pliment. In case the author of the preoccupied name is living the ethical thing to do is to inform him of the preoccupation and let him propose a new name.

Names of geographic significance also should be used sparingly; their chief merit lies in carrying a reminder of the type-locality or even in some cases of the range of the form. Usually however, at the time of original description of a form information on its geographic distribution is too scanty to permit selection of a name that will broadly indicate the range. When the type locality only is commemorated, subsequent advances in knowledge may reveal that the type was collected in the outskirts of the range and that it does not belong to a really typical form of the species all forms of which nevertheless must thereafter appear with a misleading geographical body name. The name of the Golden plover, *Charadrius dominicus*, is an example of this, the type specimen for the earliest name being obtained on the island of Santo Domingo, where the species is only a transient, the summer home being in the Arctic Regions and the winter home in the Southern Hemisphere. For insects, Professor H. F. Wickham has kindly cited several geographically derived names of beetles which give no adequate idea of the range, for example, *Mantura floridana* ranging to California and Fort Simpson, *Aphodius aleutus* which occurs in mountains to Colorado and California, the wide-ranging "*pennsylvanicus*" species as of *Nyctobates*, *Chauliognathus*, *Chlaenius* and *Harpalus*, the comparable *carolinus*, *virginicus*, and *noveboracensis* species and so on. *Dorcatoma dresdensis*, named for the European city is an extreme example of this kind, the species occuring commonly over middle and northern Europe and from New England and Virginia to Missouri and Montana.*

*Assistance in gathering examples of misused geographic names has kindly been given by Messrs. H. L. Viereck, Alex. Wetmore and H. F. Wickham.

If the original locality datum is incorrect or is misinterpreted, of course worse consequences follow.* A few of the misnomers resulting from using such place names as the basis of specific names may be cited: the milkweed called *Asclepias syriaca* is an exclusively American plant; the parrot, *Coriphilus peruvianus* is really from the South Sea Islands; the tody, *Todus mexicanus* is a Porto Rican bird; while *Chrysobothris* and *Cicindela* yield sufficient illustration of similar happenings in insect nomenclature, each genus having a purely American species named *tranquebarica* from the supposed type locality in India.

Naming species after cities, as *baltimorensis*, *franciscana*, etc., is a particularly futile performance. It indicates nothing of permanent value in the nomenclatorial history of the species, and the city growing, as cities do, the collection of real topotypes, in time becomes an impossibility. Place names also are by no means permanent, and change in usage of them virtually robs of significance names of organisms based on the obsolete names.

To sum up: names should have an application that the shifts of time and accidents of circumstance are least likely to render void. At their best, names are seldom commemorative and then of eminently deserving individuals, rarely of places. Most naturalists prefer that names have a descriptive application, but this is not absolutely essential, meaning-

*With reference to a bird name of this category namely that of the red-shafted flicker (*Colaptes cafer*), Elliot Coues, the noted ornithologist, voices the following protest; "With every disposition to follow the dogma and ritual of the A. O. U., I cannot bring myself to call this bird *C. cafer*, for no better reason than because *Picus cafer* Gm. 1788, was mistaken for a bird of the Cape of Good Hope! Say what we please in our canons, there is something in a name after all, and 'the letter of the law killeth' when wrenched from its spirit, in defiance of science and common sense. Individually I cannot incur the penalty of deliberately using for a North American bird a name only applicable to one from South Africa. The fact that "*Cafer*" is a sort of Latin for Caffraria or Caffrarian makes its use in this connection as bad as "Hottentot Woodpecker" or "Zulu Flicker" would be; and how would such a combination sound in plain English?" (Key to North American Birds, Fifth Ed., Vol. 2, 1903, p. 601.)

less coined names being entirely acceptable. All classes of names should be short and euphonious. Systematic work on insects in most cases is a labor of love and as much care and genuine interest should be devoted to the selection or invention of names for new forms as to any other part of the work.

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## Descriptions of New North American Acalyptrate Diptera.—II.* (Trypetidae, Sapromyzidae)

By E. T. CRESSON Jr., The Academy of Natural Sciences, Philadelphia, Pa.

**Rhagoletis juglandis** new species

♂.—General color, tawny; with the following parts paler to nearly white; frontal orbits, face, occiput, mouth parts, broad stripe from humeri to base of wings, scutellum except base, squamae, apices of second to fourth abdominal segments, coxae, and tarsi except apices. Halteres lemon yellow. (Bases of second to fifth abdominal segments are dark. Probably due to decomposition of contents). Wings hyaline with black bands as follows: First band straight from costal cell over anterior cross-vein to beyond fifth vein; second band straight and parallel to first, from costa, midway between tips of first and second veins, to and including posterior cross vein and attaining inferior margin of wing; an apical marginal band from before tip of second to and beyond tip of fourth veins. Veins pale basally, becoming black apically. Generally subopaque species; facalia, mesonotum laterally, most of scutellum, abdomen and legs, shining. All bristles black except the post verticals and few others as in *suavis* Lw.

Structurally similar to *suavis* Lw. with similar chaetotaxy. The posterior cross vein is straight and perpendicular to fourth vein, and the wing is less tapering apically. Length 4 mm.

*Type.*—♂; Carr Canyon, Huachuca Mountains, Arizona, July to August, 1919, (C. R. Bierdermann; mining the exocarp of *Juglans regia* variety), [A. N. S. P. No. 6235]. *Paratypes.*—12♂; topotypical.

This insect was sent to Dr. Skinner by Mr. C. R. Biedermann, who calls it the "Black Walnut-fly." He says " . . it appears toward the end of June, deposits its eggs in the

* Part I. Ent. News. xxv, 457–460, 1914.

green hull [of a variety of the English walnut] which is mined by the larvae, coloring the nut black. No injury seems to be done to the meat. The earlier larvae go to the ground by a silk thread, for pupation, but most of them stay in the hull till the nut falls, and pupate in it."

The insect is a typical *Rhagoletis* except in color. However in this respect the color pattern is the same as that of *R. cerasi* Linné, except that the black is substituted by tawny. In general appearance similar to *R. suavis* Loew, but the two discal wing bands are straight and parallel in the present species, not convergent, thus suggesting *dubia* Johnson which has the subapical band incomplete, and has an additional subbasal band. The present species has only the two bands besides the apical marginal band.

**Sapromyza blaisdelli** new species.

Similar to *Minettia nigrans* Mel. in general appearance, but evidently more typical of *Sapromyza* according to Melander's diagnosis.* Possibly near *S. hyalinata* Meig. The face is noticeably short and concaved.

♂.—Black; anterior margin of frons, articulations of antennae, trochanters, knees, middle and hind tibiae, and their tarsi, brown. Halteres, squamae, wings and veins, yellow. Wings not blackened at bases. Shining to polished with slight metallic tinge; face medianly above, orbits including some parts of cheeks, grayish. Mesonotum and scutellum dusted with brownish pollen.

Head higher than long, broader than high. Frons more than one-third width of head, broader than long, convex, in profile, forming an obtuse angle with face. Face broad as frons, shorter, in profile concaved with slight carina; epistoma slightly projecting. Cheeks as broad as third antennal joint. Latter three times as long as the other short joints together, twice as long as broad; arista micropubescent. Three postdorsocentrals; acrosticals sparse; one stout mesopleural; two sternopleurals. Scutellum convex, with the stout apical bristles diverging. Abdomen ovate; marginal bristles two-thirds length of segments; genital segment very large dorsoventrally. Legs normal, with preapicals on all tibiae. Wing veins parallel; ultimate section of fourth vein two to three times as long as preceding (sometimes hardly twice as long).

♀.—Similar but second and third veins somewhat diverging at apices.

Length.—3–3.5 mm.

*Psyche, xx, 61, 1913.

*Type.*—♂; San Francisco, California, August 7, 1908, (F. E. Blaisdell), [A. N. S. P. No. 6219]. *Paratypes.*—2♂, 2♀; topotypical. 2♂, 6♀; same data, but collected May 27, 1908.

**Sapromyza vanduzeei** new species.

Very similar to *blaisdelli*, but upper part of face where it is dusted with gray, antennae except upper margin of third joint, legs including coxae but excepting fore tarsi are yellow. The ocellar bristles are stronger and divergent; third antennal joint more slender; apical scutellur bristles parallel. The second and third veins in the male are slightly diverging apically.

*Type.*—♂; McCloud, Siskyou County, California, July 23, 1918, (E. P. Van Duzee), [Cal. Acad. Sci., Coll.]. *Paratypes.*—4♂, 1♀; topotypical.

One male, Niles Canyon, California, July 10, 1916, (E. P. Van Duzee), [Cal. Acad. Sci.], is probably conspecific, but the anterior part of frons is more conspicuously yellow. The legs are more strongly marked with yellow, and the basal segments of the abdomen also are yellowish. There are no apparent structural differences except in the diverging apical scutellar bristles.

**Sapromyza discolor** new species

Similar in structure to the two preceding species but in color very distinct. Entirely yellow excepting the occiput above, a broad median mesonotal stripe attenuating anteriorly, and the entire abdomen, black. There are also suggestions, posteriorly, of two dark sublateral mesonotal stripes.

*Type.*—♂; San Francisco, California, July 7, 1908, (F. E. Blaisdell), [A. N. S. P. No. 6218].

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## Mordella marginata Melsh., Bred From Fungus (Coleop.).

By Harry B. Weiss, New Brunswick, New Jersey.

This species, which is common throughout New Jersey from June to August, was bred from the sporophore of *Lenzites saepiaria* Fries, collected on a piece of deciduous timber

along the canal at Uhlerstown, Pennsylvania, on June 11. Several larvae and pupae and one adult were taken from the fungus at this time and several days later another adult emerged. The feeding appeared to have taken place entirely in the contex of the fungus and it was here that the pupal cells were found. According to Overholts (Polyporaceae of Middle Western U. S., Wash, Univ. Studies, vol. III, Part 1, No. 1) *Lenzites saepiaria* occurs on the dead wood of coniferous (rarely deciduous) trees.

Very little appears to be known concerning the larval habits of Mordellids. Some live in old wood and others have been found in the stems of plants. Coquillett found larvae of *Mordella pustulata* in plant stems under circumstances that render it highly probable that they were feeding on a Lepidopterous larva contained in the stems. In view of the fact that numerous species of fungi have been examined in the past and no Mordellids found it is extremely probable that the fungus habit in this instance was accidental.

*Full Grown Larva.* Length 4 to 5 mm. Width 1.6 mm. Body white, mouth parts dark; somewhat grub-like, convex above, flattened beneath, skin wrinkled; sparsely hairy, hairs short; segmentation distinct; legs short, weak, subcylindrical, appearing as nipple-like protuberances on enlarged subglobular bases; last abdominal segment subconical, terminated by a short subcylindrical chitinous style with four somewhat weak points formed by the depressed end; anal segment supplied with minute chitinous spines which are more numerous and larger at its distal end close to the style; anal segment bears more hairs than other body segments.

*Pupa.* Length 5 mm. Width 1.6 mm. White, sparsely hairy, rounded anteriorly, tapering slightly to penultimate abdominal segment; ultimate segment tapering abruptly to rounded end; posterior end of body terminated by two somewhat transverse leg-like appendages, each with a sharp chitinized tip; head, thorax, wing cases and sides of abdominal segments supplied with minute spines.

*Adult. Mordella marginata.* This was described by Melsheimer in 1845 (Proc. Phil. Acad. Nat. Sci. II, 312). Blatchley, in his Coleoptera of Indiana, states that it occurs throughout Indiana especially on the flowers of dogwood, Jersey tea and wild hydrangea.

## Notes on Psyllidae (Homoptera).

By D. L. CRAWFORD, College of Hawaii, Honolulu

Two brief, pre-war papers on Psyllidae (Homoptera) contributed by two Germans, require a few notes of elucidation and comment.

One of these, contributed by Dr. G. Enderlein[1] describes several new genera and species from Formosa. One of these new genera, *Agonoscena*, appears to be identical with *Paurocephala* Crawford. Enderlein makes an old species of *Rhinocola* (*R. targioni* Licht.) the type of his new genus and includes, also, a new species from Formosa (*A. Sauteri*). The latter species seems to be identical with *Paurocephala psylloptera* Crawford, which is widely distributed over tropical Asia and the outlying archipelagoes, While I have seen no examples of Enderlein's Formosan species, his figures and description convince me of the identity of his and my species.

As *Paurocephala psylloptera*[2] antedates Enderlein's *Agonoscena Sauteri*, the latter should be sunk in synonymy.

Enderlein's genus *Agonoscena* retains its validity, however, until some other disposition is made of its type species. *Rhinocola* has been made to embrace a large number of unrelated species, many of which must eventually be referred to other genera. The type of this old genus, *R. aceris* Linn., is intermediate between *Livia* and *Aphalara*[3], but few of the other species can be retained properly in the genus.

For another species of *Rhinocola*, (*R. ericae* Curtis) Enderlein erects the new genus *Strophingia*. This seems scarcely justifiable since *R. ericae* and *R. targioni* are similar and not generically distinct.

The second paper[4] supplements Aulmann's very incomplete catalog of the psyllid species of the world. A few items in this supplement suggest some comment.

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[1]H. Sauter's Formosa-Ausbeute: Psyllidae, von Dr. Günther Enderlein. Entomol. Mitteilungen III, N. 7–8, pp. 230–235, July, 1914.

[2]Crawford, Phillipine Journ. Science, VIII (Sec. D): 293, August, 1913.

[3]Crawford—United States National Museum, Bul. 85: 24, 1914.

[4]Friedrich Zacher—Bemerkungen zur "Psyllidarum Catalogus" von G. Aulmann. Entomol. Mitteilungen II, pp. 148–153, 1913.

*Phyllopecta*, a nomen nudum of Riley's, is made by Zacher to replace *Trioza tripunctata* Fitch. This name can be given no consideration because the species is clearly a member of *Trioza*.

*Psyllopa* Crawford has been merged by its author with *Arytainia*.[5] Several species were described in *Psyllopa* but all are now referred to the European genus, *Arytaina*.

Zacher has tangled himself in the translation of the English language when he catalogs *Trioza tripunctata* Löw as a synonym of *Psylla Kuwayamai* Crawford. The synonymy of three specific names is correctly as follows:[6]

*Psylla tripunctata* Fitch (1851)—referred to *Trioza tripunctata* (Fitch) by Riley in 1893. This is a valid species.

*Trioza tripunctata* Löw (1877), preoccupied. Sulc has declared this species to be identical with *Trioza trisignata* Löw. Hence *T. tripunctata* Löw (nec Fitch) is a synonym of *T. trisignata* Löw.

*Psylla tripunctata* Kuwayama (1908), preoccupied by Fitch's old name for the American species now known as *Trioza tripunctata*. Hence, the *Psylla* species name has been changed to *Ps. kuwayamai* Crawford. This is NOT a synonym of *Trioza tripunctata*, as Zacher states.

*Trioza sonchi* is one of Riley's *nomina nuda* but resurrected by Zacher. The same insect (probably) was described in 1914 as *Hemitrioza sonchi* Crawford.

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## Undescribed Tipulidae Collected by Mr. H. S. Parish in Brazil (Dipt.).

By CHARLES P. ALEXANDER, Urbana, Illinois.

During the second half of the year 1919, Mr. Herbert S. Parish, the veteran collector of insects in tropical American countries, made a trip up the Amazon River. The crane-flies secured on this expedition to the present time were not num-

[5]Crawford—United States National Museum Bul. 85: 122, 1914.
[6]Crawford—Pomona Jr. Ent. 3: 430, 1911.

erous but represented some interesting species. A few species have been recorded in another paper but the more interesting forms taken on the lower and middle Amazon are herein described. A number of species hitherto known only from Guiana have been secured by Mr. Parish on this trip.

The types of the new species are preserved in the collection of the writer.

**Teucholabis decora** sp. n.

Rostrum longer than the head; head black; mesonotal praescutum reddish orange with three black spots; pleura orange with a large black area on the mesepisternum; fore and middle femora yellow basally, hind legs entirely black; wings subhyaline with cell *Sc*, a spot at the wing-base, narrow seams along the cord and outer end of cell *1st* $M_2$, and the wing-apex dark brown.

♂.—Wing about 6.8 mm. Rostrum long and slender, a little longer than the head, black; mouthparts black. Antennae with the scapal segments dark brown; flagellum broken. Head shiny brownish black, the occiput a little paler.

Mesonotal praescutum shiny reddish orange with three black spots representing the anterior ends of the usual dark stripes; median spot cuneiform, the smaller lateral spots more oval; remainder of the dorsum reddish orange. Pleura orange with a large, shiny black area occupying about all of the mesepisternum and the sides of the mesosternum; metepisternum black. Median area of the sternum orange.

Halteres brownish black. Legs with the fore and middle coxae and trochanters yellow, the hind coxae and trochanters black; femora black; the basal third (fore legs) to half (middle legs) obscure yellow; hind legs entirely black; tibiae and tarsi black.

Wings subhyaline, cell *Sc* dark brown; base of the wing, surrounding the humeral crossvein and arculus, dark brown; a narrow dark brown seam along the cord and outer end of cell *1st* $M_2$; wing-apex with a moderately broad brown band, this including about the outer quarter of cell *2nd* $R_1$, the outer third of $R_3$ and $R_5$; the outer half of *2nd* $M_2$ and $M_3$; veins dark brownish black. Venation: $Sc_1$ ending before *r*; *r* in direct alignment with the inner ends of cells $R_3$ and $R_5$; cell *1st* $M_2$ irregular, the distal end strongly widened, *m* arcuated, a little longer than the deflection of $M_3$; basal deflection of $Cu_1$ about one-half its own length beyond the fork of *M*.

Abdomen destroyed by ants, only the black hypopygium remaining. Male hypopygium with the pleurites short, stout, with three pleural appendages, two of which are setigerous and with the apices acutely pointed, the larger of these two with a powerful lateral spine and a fringe of long reddish hairs between this spine and the apical point; the third and largest appen-

dage is a curved, heavily chitinized arm whose apex terminates in two powerful, slightly divergent points or teeth and which bears a cylindrical arm near midlength, this latter with several long setae.

*Holotype*: ♂, Igarapé-Assú, June 25, 1919 (H. S. Parish).

**Gnophomyia bisecta** sp. n.

General coloration reddish brown, the mesonotal praescutum with a single median brown stripe; pleura with an interrupted dorsal band, most noticeable as a velvety black spot on the sides of the postnotum and another on the episternum; wings with a single dark brown band along the cord; vein $R_2$ very short as in the *hirsuta* group; $Sc_1$ ending nearly opposite *r; r* at midlength of $R_{2+3}$; basal deflection of $Cu_1$ at midlength of cell *1st* $M_2$.

♀.—Length 6 mm.; wing 5.4 mm. Rostrum obscure yellowish; palpi dark brown. Antennae with the scapal segments brownish yellow; the flagellar segments dark brown. Head brownish yellow; eyes large.

Mesonotal praescutum reddish brown with a narrow, dark brown median stripe, indistinct anteriorly, this stripe very indistinctly split by a pale line; scutum similar, each lobe with a small dark brown spot; scutellum and postnotum pale brownish yellow, the latter with two rounded dark brown spots at the posterior margin. Pleura reddish brown with a broad interrupted dorsal stripe, appearing as a large deep black spot on the mesepisternum and another larger black area occupying the lateral sclerites of the postnotum dorsad of the base of the halteres; on the propleura and on the mesopleural epimera this band is paler, brown.

Halteres obscure yellow, the knobs dark brown. Legs with the coxae, trochanters and femora yellow; tibiae brownish yellow with the tips a little darkened; tarsi brown, the distal segments black. Legs short and hairy as in this group of species.

Wings subhyaline with a single, narrow, dark brown band along the cord, beginning at the costal margin, ending at the fork of *M;* wing-apex very slightly darker than the rest of the membrane; veins brownish black, those at the wing-base and in the costal region paler.

Venation: *Sc* rather long, $Sc_1$ ending just beyond *r;* $Sc_2$ far from the tip of $Sc_1$, the latter vein alone being about three-quarters the length of *Rs; Rs* long, gently arcuated; $R_{2+3}$ short, bisected by *r* which is nearly twice its length from the tip of $R_1$; $R_2$ short and almost straight, as in the *hirsuta* group, shorter than cell *1st* $M_2$; vein $R_3$ very long, deflected toward the wing-tip so that cell $R_2$ is by far the broadest of all the cells at the margin; inner ends of cells $R_3$ and *1st* $M_2$ far proximad of $R_5$; cell *1st* $M_2$ closed, the inner end somewhat narrowed; basal deflection of $Cu_1$ at midlength of cell *1st* $M_2$.

Abdominal tergites dark brown, the basal segments a little paler medially, ventral surface lighter brown; genital segment and ovipositor obscure yellow, the valves of the latter horn-colored; tips broken in the unique type. The abdomen of the type is filled with large eggs.

*Holotype*: ♀, Parintins, October 3, 1919 (H. S. Parish).

*Gnophomyia bisecta* is closest to *G. pervicax* Alexander (Peru) from which it differs in the single praescutal stripe, the wing-pattern and the details of venation.

**Psaronius pallipes** sp. n.

Head light brown with a darker median line; mesonotal praescutum light brown with three dark brown stripes; metatarsi whitish; wings with a strong brown tinge, the veins conspicuously seamed with dark brown; cell *2nd* $R_1$ of nearly uniform width for its entire length.

♀. Length 20–20.5 mm.; wing 14.5–15 mm.; abdomen alone 16.5 mm. Rostrum and palpi dark brown. Antennae with the scapal segments light brown; flagellum dark brown. Head light brown; a rounded, dark brown spot on the vertex between the eyes; a brown median stripe.

Mesonotal praescutum light brown with three conspicuous darker brown stripes; median stripe split for about the anterior half by a still darker brown capillary line; pseudosutural foveae dark brown; scutum brown, the lobes darker brown; a small dark brown spot at the end of the transverse suture; scutellum and postnotum light grey with a capillary brown median vitta. Pleura light grey, indistinctly marked with brown.

Halteres dark brown; basal half of the stem pale. Legs with the coxae and trochanters pale brown; trochanters pale brown; femora and tibiae obscure yellow, the tips narrowly dark brown; metatarsi whitish, the tips and the remainder of the tarsi dark brown.

Wings with a strong brown tinge, the costal cell darker, the subcostal cell more yellowish; small dark clouds at the origin of *Rs*, fork of *Rs*, fork of $R_{2+3}$; longitudinal veins with distinct, broad seams; wing-margin broadly infuscated; wing-base proximad of arculus darkened. Venation very similar to *P. obscurus*, differing as follows: $R_2$ running almost parallel to $R_1$ so cell *2nd* $R_1$ is of almost uniform width to the margin; fusion of $Cu_1$ and $M_3$ slightly more extensive.

Abdomen dark brown, the tergites darker medially; sternal valves of the ovipositor almost black.

*Holotype:* ♀, Prata, June 30, 1919 (H. S. Parish).

*Paratopotype:* ♀, July 5, 1919.

*Psaronius pallipes* is one of the medium-sized species of this interesting Neotropical genus. By means of the author's key to the species of *Psaronius* (Trans. Am. Ent. Soc., vol. 40, p. 250; 1914) this fly would run to *P. fuscipennis* Alexander, a larger fly with the coloration and wing-pattern distinct. Attention should perhaps be called to the fact that the abdomen is very long and contributes most to the length of the insect; for this reason a better idea of size is conveyed by the length of the wing.

**Psaronius brevitibia** sp. n.

General coloration light brown; head and mesonotal praescutum unmarked with darker; metatarsi whitish; tibiae short; wings pale yellow, sparsely marked with darker; vein $R_2$ entirely atrophied.

♀.—Length 24 mm.; wing 14.4 mm.; abdomen alone 19.5 mm. Rostrum and palpi dark brown. Antennae with the scapal segments light brownish yellow; flagellum broken. Head rufous brown, narrowly silvery adjoining the eyes; occiput and adjoining parts of the vertex dull brown.

Mesonotal praescutum light brown without distinct stripes; scutum and postnotum with a very indistinct median line. Pleura pale without distinct markings.

Legs with the femora and tibiae light brown, the tips of the latter narrowly dark brownish black; metatarsi whitish, the base and apex narrowly darkened; remainder of the tarsi dark brown; tibiae comparatively short (hind tibiae 11.5 mm.; in *P. pygmaeus* 14.2 mm.).

Wings pale yellow, the costal and subcostal cells deeper yellow; small dark brown seams at the origin and fork of *Rs*, and as very narrow seams along the cord and outer end of cell *1st* $M_2$; wing-apex in cells $R_2$, $R_3$, $R_5$ and $M_1$ faintly darkened; veins dark brown, *C*, *Sc*, *R*, *Rs* and $R_3$ yellow. Venation: vein $R_2$ entirely atrophied, quite as in *P. abnormis* Alexander; cell $M_1$ about equal to or a little shorter than its petiole.

Abdominal tergites brown, the sternites more yellowish.

*Holotype:* ♀, Obidos, August 28, 1919 (H. S. Parish).

By means of the author's key to *Psaronius*, cited under the preceding species, *P. brevitibia* would run to *P. abnormis*, of Paraguay, a greyish fly with the costal margin of the wings conspicuously infuscated. It much more resembles *P. pygmaeus* Alexander (Guiana–Brazil) which has vein $R_2$ imperfectly preserved, being represented by a short spur that is fused with $R_1$ at the tip; this species has the tibiae considerably longer as given above, and the details of venation and coloration are slightly different.

**Polymera conjunctoides** sp. n.

General coloration light brown; thoracic pleura with a narrow, black, longitudinal stripe; wings grey; cell $M_1$ deep; ovipositor with the valves long and straight.

♀.—Length about 3.5 mm.; wing 3.8 mm. Rostrum and palpi dark brown; flagellar segments in the female long-oval. Head brown.

Pronotum testaceous. Mesonotum light brown. Pleura pale brownish testaceous with a narrow black longitudinal stripe continued from the head to the base of the abdomen, passing just beneath the halteres.

Halteres dark brown, the extreme base of the stem pale. Legs with the coxae testaceous; trochanters pale brown; remainder of the legs pale brown; no tibial spurs.

Wings with a strong grey suffusion; veins brown. Venation; almost as in *P. conjuncta* but $R_{2+3}$ a little longer; $R_2$ before $r$ a little longer; basal deflection of $Cu_1$ some distance beyond the fork of $M$ and cell $M_3$ much deeper, vein $M_3$ alone being longer than the fused portion of $M_3$ and $Cu_1$.

Abdomen dark brown, the sternites a little paler. Ovipositor with the valves horn-colored, long, straight, the tips acute.

*Holotype:* ♀. Itacontiara, October 16, 1919 (H. S. Parish).

The lack, or apparent lack, of tibial spurs would refer this fly to the genus *Erioptera* rather than *Polymera*, yet the appearance of the insect is so very similar to species of this latter genus that it is referred here, at least provisionally. Whether the tibial spurs are similarly lacking in *P. conjuncta* Alexander cannot be determined at this time as no specimens are at hand.

**Brachypremna uniformis** sp. n.

Close to *B. dispellens;* femora and tibiae uniformly dark brown, the tarsi fading into cream-color.

♀.—Length 15 mm.; wing 14.2 mm. Generally similar to *B. dispellens* (Walker), differing as follows: Palpi with the first segment dark brown, the apex narrowly pale; segment two entirely pale yellow; segment three black basally, about the outer third obscure yellow; last segment black with the extreme tip conspicuous yellow. Mesonotal praescutum with the intermediate pair of brown stripes broader. Legs with the femora and tibiae of all the legs uniform brown; tarsi pale brown, the distal segments passing into cream color. Abdominal sternites one to eight with an elongate-oval black dash near the center of each segment.

*Holotype:* ♀, Parintins, October 8, 1919 (H. S. Parish).

*Brachypremna uniformis* differs conspicuously from all the known species of the genus with the exception of *B. unicolor* Osten Sacken (Antilles) in the uniformly dark femora and tibiae. By means of the author's key to the species of this genus (Journ. N. Y. Ent. Soc., vol. 20, p. 228; 1912), *B. uniformis* would not run past the initial couplet because of the combination of venation and leg-coloration. The venation is quite as in *B. dispellens* and related species but the entire absence of white on the femora and tibiae precludes its reference to any of these species. *B. unicolor* differs from all other species of the genus as known, including this new form, in the very curious wing-venation.

# New Species of Lyonetiidae (Microlepidoptera).

By ANNETTE F. BRAUN, Cincinnati, Ohio.

The types of these new species are in the writer's collection. Paratypes of *Bucculatrix errans* and of *Coptodisca negligens* will be placed in the collection of the Academy of Natural Sciences of Philadelphia.

**Bucculatrix fusicola** n. sp.

Head white, occasionally a few fuscous scales in the middle of the tuft; antennae white, shading to pale fuscous toward the tips.

Thorax and fore wings pure white, the wings marked with ocherous streaks, which are sometimes slightly dusted with brown. There is a median streak from base, often faint in the male; an oblique streak from middle of costa, soon bending to become parallel with the median streak (part near costa usually obsolete in female); a second, straight and less oblique brownish costal streak passing across the wing and meeting on the termen the end of a line of black scales which extends along the termen to the apex; beyond the second costal streak a patch of slightly dusted ocherous scales whose inner edge is parallel with the second costal streak and nearer to it than the second is to the first costal streak; a faint ocherous streak along the dorsum is deflexed beyond the middle and passes obliquely upward joining the second costal streak; a line of black scales in the cilia from apex to tornus diverges slightly from the line bordering termen. Hind wings pale grayish ocherous in male, fuscous in female.

Legs whitish, tips of tarsal segments spotted with black in female. Expanse: 12 mm.

*Type* (♀), reared from a spindle-shaped gall on stem of *Helianthus tracheliifolius* at Cincinnati, Ohio; in addition to the type, a large series of captured specimens, taken in patches of this species of sunflower.

The gall is usually situated toward the upper part of the stem and averages about 2 cm. in length, with a greatest diameter of .5 cm. The cavity in the gall within which the larva feeds, is of about the same proportions. The larva finishes eating in the latter part of September, but remains in the gall throughout the winter, escaping in the spring through a minute circular aperture. The cocoon is dark brownish fuscous, *smooth* and flattened, and closely appressed to the surface on which it is spun, resembling not at all the usual *Bucculatrix* cocoon. The imagoes appear from the end

of May to early July. Apart from the anomalous habits of the larva and peculiar cocoon, this species shows no divergence from the usual *Bucculatrix* type.

This species is closely related to Chamber's *B. magnella* and has been known as that species in some collections. There are several large species of this general appearance, of which the species described below is one.

**Bucculatrix montana** n. sp.

Head white, with a few fuscous hairs in the tuft; antennal stalk pale fuscous.

Thorax and fore wings shining white; three equally spaced oblique and parallel ocherous-dusted costal streaks, the first before the middle bending below costa to join the second, which runs into some pale dusting on the termen, the third the broadest. From just before apex a brown streak runs to tip of apical cilia and is met at about half its length by a line of dusting extending through the middle of terminal cilia; a curved dorsal streak just beyond middle of wing bends backward along the fold. Hind wings pale grayish ocherous.

Legs pale whitish ocherous, with the tips of tarsi darker. Abdomen ocherous, fuscous toward tip above. Expanse: 11 mm.

*Type* (♂), Mountain Lake, Virginia, June 18.

The specimen emerged from a rather large cocoon of the usual *Bucculatrix* type; food plant unknown.

**Bucculatrix errans** n. sp.

Face and head pure white, middle of tuft dark brown; antennal stalk brown, becoming paler toward tip.

Thorax white. Fore wings dark brown; just within the costa, a broad white streak from base, broadening outwardly, shortest along the costa and prolonged on the disk nearly to the middle of the wing; base of wing below the fold white, this white sometimes increased in extent to occupy the entire base of dorsum when it is then connected at the base with the aforesaid white streak; just below the middle a curved white costal streak, and a little nearer the base a large half-crescent-shaped dorsal streak; a narrow costal streak at two-thirds and opposite it at the tornus a pair of white spots of which the posterior one points inwardly; a triangular white spot in costal cilia at apex, bordered outwardly by an oblique line running out into the cilia; a line of dark scales through middle of cilia to tornus. Occasionally the white marks are so increased in extent that the apices of the spots and streaks in the basal half of the wing coalesce. Hind wings and cilia dark brownish gray.

Legs except tarsi dark brown outwardly; abdomen dark brown. Expanse: 10–10.5 mm.

The type series was reared from larvae feeding on *Aster shortii* at Cincinnati, Ohio. The larva makes a long, transparent, linear, contorted and sometimes spiral mine in the leaves in the autumn. In early November, in a slight enlargment at the end of the mine, the larva spins a flat, yellow, circular, wintering cocoon, similar in appearance to the moulting cocoon, but of denser texture, within which it lies curled during the winter. In March of the following year, it leaves this cocoon by a circular opening, and bores into a growing shoot just below the growing tip, hollowing out the stem, so that the tip of the shoot dies. It feeds downward, usually eating out the whole contents of the stem for about an inch; when full grown it escapes by a circular hole near the lowest part of the burrow. Larva yellowish white, with two black spots on dorsum of first thoracic segment; head yellowish. The white or pale yellowish cocoon, which is of the usual *Bucculatrix* type, with a series of slightly raised longitudinal ridges, is spun on dead stems or twigs lying near the food plant, but apparently never on the food plant. Imagoes in the latter part of May.

Although the mines are present in immense numbers on the leaves in the fall, probably not more than one per cent of the larvae reach maturity.

**Tischeria nubila** n. sp.

Face and head whitish straw-colored with a few fuscous scales on the sides behind; antennae whitish, in male fuscous beneath.

Thorax darker, on the sides more ocherous than the head; fore wings with the ground color sulphur yellow, the color deepening on the margins and in the apical fourth to reddish or brownish ocherous; on these darkened areas there is scattered dark dusting, which usually forms a distinct dark line at the base of the cilia around the apex and a rather large dark spot at the tornus, and follows the dorsal margin to the base; under side of base of costa of male fuscous. Hind wings pale ocherous, slightly deeper at apex.

Legs ocherous dusted with fuscous outwardly. Expanse: 7.5 mm.

*Type* (♂), and seven paratypes reared from larvae mining leaves of white oak, *Quercus alba*, at Winnfield, Louisiana, (collected by G. R. Pilate). The mine is variously placed on the leaf, always elongate, with epidermis wrinkled and torn

ta pupation much as in *Coptotriche*. Mines received early in May produced imagoes during the latter half of that month.

This species is similar to *T. badiiella* in distribution of dark dusting, but the ground color is deeper and the base of the costa of the hind wing of the male is not thickened with dark fuscous scales as in that species.

**Coptodisca negligens** n. sp.

Face and head pale leaden metallic; antennae blackish.

Thorax and basal half of fore wings pale leaden metallic; apical half or more of wing bright orange yellow; the silvery costal and dorsal streaks at the apical third nearly opposite, of about equal size, their apices usually separated by the yellow ground color, rarely with their internal dark margins confluent. The outer dark margin of the dorsal spot forms part of the dark patch of scales which extends from it to the dorsum and termen, but is separated from the costal streak and apical dark patch by the orange yellow color. A perpendicular dark streak in the costal cilia beyond the costal silvery streak. Apical dark patch preceded by a minute silvery spot and broadly bordered on either side with silvery scales; from it a black pencil extends into the apical pale gray cilia. Hind wings gray.

Legs silvery gray, tarsi fuscous. Expanse: 4–4.5 mm.

The type series, consisting of 55 specimens, was reared from mines on leaves of cranberry, *Oxycoccos macrocarpon*, from Cranberry Island, Buckeye Lake, Ohio. The species is peculiar in the genus in that it is single brooded: the cranberry plant from which the mines were obtained was brought from Cranberry Island about August 5, and there were at that time no mined leaves on the plant. Early the following spring the majority of the overwintering leaves were observed to be affected, a single leaf containing sometimes four or five mines. The mine is of the usual type; the pupal case is cut lengthwise in one-half the leaf and when completed measures 1 by 2.5 mm. The larvae were full grown early in May and produced moths during the first half of June. The moth apparently deposits its eggs on the leaves of the new growth, to remain without hatching until the following spring. The mined leaves of the preceding year's growth are lost early in the season.

This species is distinguished from others of the genus by the brighter orange color of the apical half of the wing. *C.*

*magnella* lives on a closely allied food plant (*Gaylussacia*) but even in its darker forms, can be separated easily from this species by the pale golden face and head, a constant character.

## The Bembicine Wasps of North Carolina (Hym.).

By M. R. Smith, Raleigh, North Carolina.

While examining and reclassifying the wasps of this tribe in the collection of the Division of Entomology of the North Carolina State Department of Agriculture, the writer found a large number of specimens present, representing all the various genera known, except one. Therefore it seemed worth while to publish a paper making known the various species found in the state and their distribution.

In the preparation of this paper the writer has followed very closely, Parker's excellent work, "A Revision of the Bembicine Wasps of America North of Mexico."* The keys are, as a whole, adapted from his paper, as are also quite a few of the notes.

Collections were made in the state by the following men, their initials being given in the paper for the sake of brevity: Franklin Sherman, C. S. Brimley, A. H. Manee, R. S. Woglum, Z. P. Metcalf, C. L. Metcalf, R. W. Leiby, J. E. Eckert, Max Kisliuk and the writer.

To Messrs C. S. Brimley and Franklin Sherman much credit is due for their kind assistance in the preparation of this paper.

*Key to Genera*

1—Anterior ocellar cicatrix circular or elliptical in form, sometimes placed in a pit ..... 2.

1—Anterior ocellar cicatrix linear, transverse, straight, or curved, in a few species the ocellus not completely obliterated ..... 3.

2—Anterior ocellar cicatrix not placed in a pit; seventh tergite of males with lateral spines, eighth sternite ending in a single spine and middle femora with a strong curved tooth below near distal end ..... *Stictia.*

*Proceedings of the United States National Museum, Vol. 52, pp. 1–55. No. 2173. 1917.

2—Anterior ocellar cicatrix placed in a pit; seventh tergite of male without lateral spines; middle femora without curved tooth below near distal end; eighth sternite ending in three spines, and in many species bearing a fourth discal spine ..... *Stictiella.*
3—Posterior surface of thorax concave, its lateral angles prolonged, compressed and wedge-like ..... *Bicyrtes.*
3—Posterior surface of thorax flat or convex, its lateral angles rounded..4.
4—Mandibles toothed; apical end of radial cell of anterior wing on costal border ..... *Bembix.*
4—Mandibles not toothed; apical end of radial cell of anterior wing not on costal border ..... *Microbembex.*

KEY TO SPECIES OF STICTIELLA.

*Males*

1—Middle femora smooth beneath: wings clear ..... *pictifrons.*
1—Middle femora not smooth beneath, toothed; wings cloudy .... *serrata.*

*Females*

1—Pulvilli distinct; band on scutellum sometimes interrupted narrowly on the median line ..... *pictifrons.*
1—Pulvilli indistinct; no band on scutellum ..... *serrata.*

**Stictiella pictifrons** Smith.

The markings are lighter on the male than on the female and are not so well developed. Length 12–15 mm.

Parker records this species from North Carolina in his paper, no specific locality being given. We have no specimens in our collection.

**S. serrata** Handlirsch.

As the specific name signifies, this species has prominent saw-like teeth beneath the middle femora of the male. Both sexes are generally smaller than are those of *S. pictifrons.* Length 11–13 mm.

No specific locality record is given for this species; it is recorded from North Carolina by Parker. We have no specimens in our collection.

KEY TO SPECIES OF BEMBIX

*Males*

1—Intermediate femora distinctly saw-toothed or toothed ..... 2.
1—Intermediate femora smooth, not distinctly saw-toothed or toothed..3.
2—Process on under side of the sixth abdominal segment a transverse ridge, not sharply pointed but slightly curved on either side of the midline ..... *belfragei.*

2—Process on under side of the sixth abdominal segment not as above, relatively small, sharply pointed or if flattened, the sixth sternite lacks the lateral processes or ridges ..... *spinolae.*

2—Under side of second and sixth abdominal segments with processes, that on second more or less well developed, in exceptional cases lacking, that on sixth simple, median, pointed ..... *texana.*

2—Under side of second and sixth abdominal segments without processes ..... *pruinosa.*

*Females*

1—Neither post-scutellum nor dorsum of median segment (excluding posterolateral angles) marked with yellow ..... 2.

1—Post-scutellum or dorsum of median segment, or both, marked with yellow ..... *pruinosa.*

2—Last abdominal segment, strongly wrinkled dorsally ..... *belfragei.*

2—Last abdominal segment not wrinkled, punctate ..... 3.

3—Bands on dorsal abdominal segments sinuate but not greatly attenuated medially, body rather slender ..... *spinolae.*

3—Bands on dorsal abdominal segments wide laterally and much attenuated medially or reduced to widely separated lateral spots. body relatively robust ..... *texana.*

**Bembix texana** Cresson.

This species in a general way, may be distinguished by the fasciae being so attenuated and sinuated medially as to enclose more or less well marked black spots on the dorsum of the abdomen. On the second segment of the abdomen this marking is particularly more striking than on the other segments. The markings should not be relied upon too much, however, as specific characteristics, since they are variable. Length 15–18 mm.

Specimens were collected at Raleigh M. July, 1912, C. L. M; M. July and E. August, 1902, F. S.; Overhills, L. August, 1919, J. E. E.; Princeton, L. July, 1902, F. S. 6 specimens: 4 females, 2 males.*

**B. pruinosa** Fox.

This rather large, handsome species may be easily distinguished by the dense pubescence on the head, thorax and base of the abdomen, particularly by the pubescence of the former two. The transverse bands are large and broad. Length 16–19 mm.

The two specimens, a male and a female were collected at Beaufort, L. June, 1903, F. S.

*(To be Continued)*

*The letters E., M., and L., prefixed to dates, refer to early, mid, or late, for example, early August, mid August, late August.

# ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., MARCH, 1920.

## A FIFTY YEARS' EDITORSHIP AND ARTHROPODS.

It is always a good thing for the entomologist to look outside his own subject and its special literature if with no other hope than that of obtaining some new ideas with which to illuminate his own studies. *The Quarterly Journal of Microscopical Science* (London) for October, 1919, contains an article by one of its cooperating editors on "Fifty Years of the 'Quarterly Journal of Microscopical Science,' under the Editorship of Sir E. Ray Lankester." In it a brief sketch of the foundation of the Journal in 1853, with Dr. Edwin Lankester as one of its editors, is given. "In 1869 E. Ray Lankester, then a newly graduated B. A. of Oxford, joined his father in the editorship" and became chief editor in 1872. The most important articles in various biological fields which have appeared in the Journal are enumerated, as, for example, "the extremely interesting memoirs on the natural history of Termites by Grassi and Sandias in 1896 and 1897," translations, however, from publications in the Italian. It would appear from this list that contributions on the insects have not been so numerous or important to receive much attention. But there is this paragraph:

> The series of articles by Sir Ray Lankester, beginning in vol. 21. (1881) with the memoir, "Limulus an Arachnid" are now among the classics of zoological literature, and to this day stand as an example of the way in which a morphological problem may be followed up in detail by critical analysis of every organ in the bodies of the animals brought into comparison. The paper on the minute structure of the lateral and central eyes of Scorpio and Limulus was written in conjunction with A. G. Bourne, and marks a great advance in our knowledge of the structure and genesis of the Arthropod eye, In later years (vol. 48, 1904) these memoirs were summed up and extended in a masterly review of the structure and classification of the Arachnida. As a parallel piece of research we may notice Lankester's illuminating memoir, "Observations and Reflections on the Appendages of *Apus cancriformis*, vol. 21 (1881), followed by P. Pelseneer's more detailed study of the same species (vol. 25, 1885), and the whole sub-

ject of Arthropod structure and classification is summed up in Sir Ray's essay in vol. 47 (1904) to which G. H. Carpenter's notes on the segmentation and phylogeny of the Arthropoda in vol. 49 (1905) is a fitting pendant.

We may also include the series of memoirs on *Peripatus*, "no less famous in the annals of the Journal."

A preceding number of the Journal (April, 1919) contained a brief article by Sir Ray on the "Terminology of Parthenogensis" in which the case of the "greenflies or Aphides" is used as an illustration.

It is not often that an editor is still active after fifty years' association with the same journal and we may fittingly join the British zoologists in offering Sir Ray our "cordial congratulations on the achievements of past years coupled with best wishes for those that are to come."

# Notes and News

## ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE

### Pseudagenia capella nom. nov. (Hym., Psammocharidae)

In "Philippine Wasp Studies" (Bull. No. 14, Ent. Ser.; Report of the Work of the Experiment Station of the Hawaiian Sugar Planters' Association, Published in Honolulu, Hawaii, December 31, 1919), on pages 45 and 46, I described a psammocharid wasp under the name of *Pseudagenia caerulescens*, and further referred to the species on page 100. As *caerulescens* has long ago been used by Dahlbom for the specific name of an American wasp belonging to the gemus *Pseudagenia*, my Philippine species is a homonym and its name must be changed. I therefore change the name of my Philippine species from *Pseudagenia caerulescens* Williams to *Pseudagenia capella* Williams.—Francis X. Williams, Honolulu, Hawaii.

# Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded.

The numbers in Heavy-Faced Type refer to the journals, as numbered n the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of papers containing new species are all grouped at the end of each Order of which they treat.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

**4**—Canadian Entomologist, London, Canada. **7**—Annals of The Entomological Society of America, Columbus, Ohio. **15**—Insecutor Inscitiae Menstruus, Washington, D. C. **16**—The Lepidopterist, Salem, Mass. **17**—Lepidoptera, Boston, Mass. **39**—The Florida Buggist,

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**Cockerell, T. D. A.**—The bees of Gold Hill, Colorado. **4,** 1919, 271–3.

## Obituary

GEORGE MACLOSKIE, professor of biology at Princeton University from 1875 to 1906 and emeritus professor since 1906, died at Princeton, New Jersey, January 4, 1920. To Professor Conklin of that University, we are indebted for copies of a notice of Prof. Macloskie's life, which appeared in *The Princeton Alumni Weekly* of January 14, and of the resolutions adopted by the University faculty, January 5, published in the *Princeton Packet*. From these the following abstract has been prepared. To Professor W. M. Rankin, of the same institution, we owe the list of Prof. Macloskie's entomological papers printed below.

George Macloskie was born at Castletown, Ireland, September 14, 1834, received the A. B. and A. M. degrees from Queen's University, Belfast, in 1857 and 1858, and LL. B. and LL. D. in course from London University in 1868 and 1871. Ordained a minister of the Presbyterian church in 1861, he was pastor at Ballygoney, Ireland, from 1861 to 1874. The interest he displayed in natural history caused President McCosh of Princeton, at one time his teacher, to call him to the chair of that subject, in the recently established John C. Green School of Science, in 1875.

The resolutions of the faculty referred to above, prepared by Professors W. B. Scott and Rankin, state

Through . . . [thirty one] . . . years he gave his energies with scarcely an intermission to the teaching of Botany and Zoology as long as they were required studies, and then to smaller and specialized classes in elective biological subjects. Not only was he an enthusiastic teacher of Natural History but he also taught the formerly required subject of the English Bible, and was also the examiner of the Latin required of the entering School of Science students . . . Bred as a theologian he was nevertheless in sympathy with the then new doctrine of Evolution, and throughout his life was a firm upholder of the essential harmony of Science and Religion.

He is described as an omnivorous reader, having a keen interest in mathematical, physical and linguistic studies, a promoter of Esperanto, author of an *Elementary Botany* and of a *Flora of Patagonia* in three volumes, based on material collected by Princeton expeditions.

In entomology his interest was chiefly morphological and anatomical, as the following list shows.

Papers on Entomology by George Macloskie

From *The American Naturalist*: The Proboscis of the House-fly, March 1880.—The Endocranium and Maxillary Suspensorium of the Bee, May, 1881.—The Structure of the Tracheae of Insects, June, 1884.—Kraepelin's Proboscis of Musca (An abstract & review), Dec., 1884.—Embryology of Aphides by Witlaczil (a review and abstract), Feb., 1885.—Witlaczil on Psyllidae (abstract and review) March, 1886.—Grosse's Classification and Structure of the Bird-lice or Mallophaga (Abstract), April, 1886.—The Poison-apparatus of the Mosquito, Oct., 1888.

From *Science*: The Structure of Insect Tracheae (Abstract of a paper read before the American Society of Naturalists, Dec., 1891), Feb., 1892.

From *Psyche*: Pneumatic Functions of Insects, Nov., 1882.—Gills of Insect Larvae, Dec., 1883.—Head of Larval Musca,—Preliminary note, Dec. 1884.

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